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EXAMINER

CHUO, TONY SHENG HSIANG

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1795

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Response to Arguments

1. The previous objection to the drawings is withdrawn. The previous objection to the specification is withdrawn.

The applicant argues that the references as applied do not disclose or suggest a fuel cell anode comprising a mesh having an "electrocatalyst layer only on the strands leaving the pores and channels substantially uncovered" as recited in claim 1, the sole independent claim. The applicant further states that the record indicates that the opposite is true, in that vacuum deposition onto a web or mesh support frequently results in the closure of openings therein. In particular, Dearnaley discloses the use of vacuum deposition to form "barriers coatings for food packaging" and "optical thin films" by deposition of materials with a "web coating process." Dearnaley at 5, lines 8-17. In other words, Dearnaley states that vacuum deposition can close up the openings in a web to form a continuous sealed barrier or film.

In response, the examiner disagrees that Dearnaley teaches the opposite by stating that vacuum deposition can close up the openings in a web to form a continuous sealed barrier or film. Dearnaley discloses examples of vacuum deposition applications that do not involve wire mesh supports. Therefore, there is no explicit teaching of vacuum deposition closing up the openings in a wire mesh support. In addition, Dearnaley further states that "The vacuum deposition techniques of the present invention are capable of forming large area, high performance fuel cell electrodes with low Pt loadings" (See page 13, lines 7-9). This further supports the fact that vacuum deposition deposits electrocatalyst only on the strands because electrocatalyst that is

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deposited only on the strands results in larger surface area of electrocatalyst as compared to electrocatalyst that also closes the openings of the wire mesh. Further, the specification of the present application also provides support for the fact that the chemical vapor deposition process disclosed by Dearnaley would deposit electrocatalyst only on the strands of a wire mesh support leaving the pores and channels substantially uncovered (See page 19, lines 8-14).

The applicant further argues that the rejection fails to satisfy factual inquiries (2) and (3) of the rationale. As noted above, the rejection is inadequate to establish factual inquiry (2), more specifically that a mesh with an "electrocatalyst layer only on the strands leaving the pores and channels substantially uncovered" was known in the art. Furthermore, as detailed below, there is no factual support for any finding of (3) that one of ordinary skill in the art could have substituted the catalyst support member of Doyon for the electrode of Dearnaley and would have predicted success in doing so.

In response, the Dearnaley reference discloses that "The support for the claimed coating may be any number of materials, preferred materials being suitable for use in electrodes in fuel cells" (See page 5, lines 19-21). The disclosure of Dearnaley provides factual support that the catalyst support could be substituted for any material that is suitable for use in electrodes in fuel cells and that the results of the substitution would have been predictable. The Doyon reference discloses a support member "3" that includes through openings such as a wire mesh shown in Figure 1A that is utilized as a catalyst support for a fuel cell anode electrode. Therefore, a wire mesh that functions as a catalyst support for a fuel cell anode is known in the art and one of

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ordinary skill in the art could have substituted one known catalyst support for another and the results would have been predictable.

The applicant further argues that the anodes of Doyon are intended for use in "molten carbonate fuel cells". This is completely different from the gaseous fuel source of Dearnaley.

Although the catalyst support of Doyon is intended for use in a different type of fuel cell, one of ordinary skill in the art would be able to envisage using the wire mesh catalyst support in the fuel cell of Dearnaley. In addition, there is no teaching in Doyon that the wire mesh catalyst support can only be used in molten carbonate fuel cells.

Regarding the argument that even if the alleged teachings of Pollack were applied to Hamada et al exactly as suggested in the grounds for rejection, the claimed invention would not result, the examiner would like to point out that Pollack is applied to Dearnaley and Doyon, not to Hamada.

TC

/Jonathan Crepeau/
Primary Examiner, Art Unit 1795